

## I CLAIM:

1. A converter with a damping mechanism for preventing resonances, comprising:
  - a rectifier;
  - an inverter; and
  - an intermediate circuit which connects said rectifier to said inverter, said intermediate circuit comprising:
    - a first conductor connected to a first potential;
    - a second conductor connected to a second potential that is different than said first potential;
    - a current-compensated choke looped into said first conductor and said second conductor, said current-compensated choke comprising:
      - a first winding; and
      - a second winding, wherein a first current flowing from said rectifier to said inverter flows through said first winding and a second current flowing back from said inverter to said rectifier flows through said second winding.
2. The converter in accordance with claim 1, wherein said first winding and said second winding are wound on a common core.
3. The converter in accordance with claim 2, wherein magnetic fields generated within said common core by equal portions of said first current and said second current flowing to and from said inverter cancel each other out.

4. The converter in accordance with claim 2, wherein said first winding and said second winding are arranged in such a way that magnetic fields of alternately arranged areas of said first winding and said second winding already cancel each other out before contributing to a magnetization of said common core.

5. The converter in accordance with claim 3, wherein said first winding and said second winding are arranged in such a way that magnetic fields of alternately arranged areas of said first winding and said second winding already cancel each other out before contributing to a magnetization of said common core.

6. The converter in accordance with claim 4, wherein said first winding comprises a first set of conducting foils and said second winding comprises a second set of conducting foils, wherein said first set and second set of conducting foils are alternately and together wound on said common core.

7. The converter in accordance with claim 5, wherein said first winding comprises a first set of conducting foils and said second winding comprises a second set of conducting foils, wherein said first set and second set of conducting foils are alternately and together wound on said common core.

8. The converter in accordance with claim 1, wherein at least one of said first potential and said second potential is electrically clamped by a clamp capacitor connected to ground.

9. The converter in accordance with claim 8, further comprising a clamp resistor connected to ground in series with said clamp capacitor.

10. The converter in accordance with claim 1, wherein said current compensated choke further comprises a dampening device that damps oscillations of said current-compensated choke.

11. The converter in accordance with claim 10, wherein said dampening device comprises a damping resistor which is transformer-coupled to said first and second windings via secondary coils of said current compensated choke.